```
chain nodes :
14  15  17  19  20  21  22  23  24
ring nodes :
3  4  5  6  7  8  9  10  11  12
chain bonds :
4-19  5-20  6-21  7-22  8-23  9-24  10-15  11-17  12-14
ring bonds :
3-4  3-5  3-6  3-7  3-8  3-9  4-12  5-12  6-11  7-11  8-10  9-10
exact/norm bonds :
3-4  3-5  3-6  3-7  3-8  3-9  4-12  4-19  5-12  5-20  6-11  6-21  7-11  7-22  8-10
8-23  9-10  9-24  10-15  11-17  12-14


G1:Bi,Ce,Co,Cr,Fe,Ir,La,Rh,Ru,Sc,Ti,V,Y

G2:H,Si,CH3,Et,n-Pr,i-Pr,n-Bu,i-Bu,s-Bu,t-Bu

G3:CH3,Et,n-Pr,i-Pr,n-Bu,i-Bu,s-Bu,t-Bu,Si

Match level :
3:Atom  4:Atom  5:Atom  6:Atom  7:Atom  8:Atom  9:Atom  10:Atom  11:Atom  12:Atom
14:CLASS  15:CLASS  17:CLASS  19:CLASS  20:CLASS  21:CLASS  22:CLASS  23:CLASS
24:CLASS



L1      STRUCTURE UPLOADED

=> d his

     (FILE 'HOME' ENTERED AT 18:08:03 ON 25 OCT 2008)

     FILE 'REGISTRY' ENTERED AT 18:08:32 ON 25 OCT 2008
L1              STRUCTURE UPLOADED

=> d l1
L1 HAS NO ANSWERS
L1              STR
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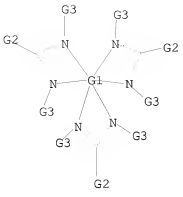

G1 Bi,Ce,Co,Cr,Fe,Ir,La,Rh,Ru,Sc,Ti,V,Y

G2 H,Si,Me,Et,n-Pr,i-Pr,n-Bu,i-Bu,s-Bu,t-Bu

G3 Me,Et,n-Pr,i-Pr,n-Bu,i-Bu,s-Bu,t-Bu,Si

Structure attributes must be viewed using STN Express query preparation.

```
=> s l1
SAMPLE SEARCH INITIATED 18:09:07 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -      404 TO ITERATE

100.0% PROCESSED      404 ITERATIONS                                  2 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE   **COMPLETE**
                        BATCH    **COMPLETE**
PROJECTED ITERATIONS:          6875 TO     9285
PROJECTED ANSWERS:                2 TO      124

L2             2 SEA SSS SAM L1

=> s l1 full
FULL SEARCH INITIATED 18:09:15 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -     8100 TO ITERATE

100.0% PROCESSED     8100 ITERATIONS                                 23 ANSWERS
SEARCH TIME: 00.00.01

L3            23 SEA SSS FUL L1

=> fil caplus
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                      ENTRY    SESSION
FULL ESTIMATED COST                                   178.36     178.57

FILE 'CAPLUS' ENTERED AT 18:09:22 ON 25 OCT 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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FILE COVERS 1907 - 25 Oct 2008 VOL 149 ISS 18
FILE LAST UPDATED: 24 Oct 2008 (20081024/ED)

Caplus now includes complete International Patent Classification (IPC)
reclassification data for the second quarter of 2008.

Effective October 17, 2005, revised CAS Information Use Policies apply.
They are available for your review at:

http://www.cas.org/legal/infopolicy.html

=> s l3
L4 14 L3

=> d l-14 bib abs

L4 ANSWER 1 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2008:634229 CAPLUS
DN 149:190209
TI Methyl- and propylacetamidinates of lanthanides: Structures, catalytic and some physical properties
AU Bochkarev, Mikhail N.; Maleev, Alexander A.; Balashova, Tatyana V.; Fukin, Georgy K.; Baranov, Evgenii V.; Efimova, Yulia A.; Petrov, Boris I.; Ilichev, Vasilii A.
CS G. A. Razuvaev Institute of Organometallic Chemistry of Russian Academy of Sciences, Nizhny Novgorod, 603950, Russia
SO Inorganica Chimica Acta (2008), 361(8), 2533-2539
CODEN: ICHAA3; ISSN: 0020-1693
PB Elsevier B.V.
DT Journal
LA English
AB The acetamidinates {[MeNC(Me)NMe]2Ln}2[μ-η2,η2-MeNC(Me)NMe]2 (Ln = Y (1), Dy (2)) and {[PrNC(Me)NPr]2Y}2[μ-η2,η2-PrNC(Me)NPr]2 (3) were prepared by the reactions of amides Ln[N(SiMe3)2]3 with resp. N,N'-disubstituted amidines MeNC(Me)NHMe or PrNC(Me)NHPr. The reaction of Er[N(SiMe3)2]3 with excess of monosubstituted amidine HNC(Me)NHPri or in a ratio of 1:2 gave {Er[NC(Me)NHPri]3}x (4). The same reaction with 1:1 ratio yielded heteroleptic complex {Er[N(SiMe3)2]2[NC(Me)NHPri]}x (5). The complexes 1, 2 and 3 have similar structures and contain four terminal and two μ-η2:η2-N,N-bridging amidinate groups binding the metal atoms. Volatility of 1, 2 and 3 is comparable to that of known monomeric La[PriNC(R)NPri]3. Compound 1 efficiently catalyzes the ring-opening polymerization of rac-lactide to give polylactide with Mn 53,085 and polydispersity 1.84.
RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2007:1274770 CAPLUS
DN 147:531805
TI Method and apparatus for photo-excitation of chemicals for atomic layer deposition of dielectric film
IN Singh, Kaushal K.; Mahajani, Maitreyee; Ghanayem, Steve G.; Yudovsky, Joseph; McDougall, Brendan
PA USA

SO U.S. Pat. Appl. Publ., 40pp., Cont.-in-part of U.S. Ser. No. 381,970.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20070259111	A1	20071108	US 2006-464121	20060811
	US 20070259110	A1	20071108	US 2006-381970	20060505
	WO 2007131040	A2	20071115	WO 2007-US68043	20070502
	WO 2007131040	A3	20080110		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AP, EA, EP, OA				
PRAI	US 2006-381970	A2	20060505		
	US 2006-464121	A	20060811		

AB The invention generally provides a method for depositing materials, and more particularly, embodiments of the invention relate to CVD processes and atomic layer deposition processes using photoexcitation techniques to deposit barrier layers, seed layers, conductive materials, and dielec. materials. Embodiments of the invention generally provide methods of the assisted processes and apparatuses, in which the assisted processes may be conducted for providing uniformly deposited material.

L4 ANSWER 3 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2007:1120192 CAPLUS
DN 147:438176
TI Semiconductor memory device
IN Matsui, Yuichi; Miki, Hiroshi
PA Hitachi, Ltd., Japan
SO U.S. Pat. Appl. Publ., 20pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20070228427	A1	20071004	US 2007-723683	20070321
	JP 2007266474	A	20071011	JP 2006-91842	20060329
	KR 2007098504	A	20071005	KR 2007-20598	20070228
PRAI	JP 2006-91842	A	20060329		

AB HfO2 films and ZrO2 films are currently being developed for use as capacitor dielec. films in 85 nm technol. node DRAM. However, these films will be difficult to use in 65 nm technol. node or later DRAM, since they have a relative dielec. constant of only 20-25. The dielec. constant of such films may be increased by stabilizing their cubic phase. However, this results in an increase in the leakage current along the crystal grain boundaries, which makes it difficult to use these films as capacitor dielec. films. To overcome this problem, the present invention dopes a base material of HfO2 or ZrO2 with an oxide of an element having a large ion radius, such as Y or La, to increase the O coordination number of the base material and thereby increase its relative dielec. constant to 30 or higher even when the base material is in its amorphous state. Thus, the

present invention provides dielec. films that can be used to form DRAM capacitors that meet the 65 nm technol. node or later.

L4 ANSWER 4 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2006:1153738 CAPLUS
DN 145:481708
TI Atomic layer deposition of a ruthenium layer onto a lanthanide oxide dielectric layer
IN Ahn, Kie Y.; Forbes, Leonard
PA Micron Technology, Inc., USA
SO U.S. Pat. Appl. Publ., 16pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 20060244082	A1	20061102	US 2005-117125	20050428
PRAI US 2005-117125		20050428		

AB Electronic apparatus and methods of forming the electronic apparatus include a conductive layer having a layer of Ru in contact with a lanthanide oxide dielec. layer for use in a variety of electronic systems. The lanthanide oxide dielec. layer and the layer of Ru may be structured as ≥1 monolayers. The lanthanide oxide dielec. layer and the layer of Ru may be formed by atomic layer deposition. The layer structures are provided as alternative gate dielec. materials to meet increased scaling requirements in micro electronic devices.

L4 ANSWER 5 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2006:1070233 CAPLUS
DN 145:409478
TI Processes for the production of organometallic compounds
IN Thompson, David Michael
PA USA
SO U.S. Pat. Appl. Publ., 12pp., Cont.-in-part of U.S. Ser. No. 53,836.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 20060229462	A1	20061012	US 2006-345280	20060202
US 20060177577	A1	20060810	US 2005-53836	20050210
PRAI US 2005-53836	A2	20050210		

OS CASREACT 145:409478; MARPAT 145:409478
AB This invention relates to processes for the production of organometallic compds. represented by the formula M(L)3 wherein M is a Group VIII metal, e.g., ruthenium, and L is the same or different and represents a substituted or unsubstituted amidinato group or a substituted or unsubstituted amidinato-like group, which process comprises (i) reacting a substituted or unsubstituted metal source compound, e.g., ruthenium (II) compound, with a substituted or unsubstituted amidinate or amidinate-like compound in the presence of a solvent and under reaction conditions sufficient to produce a reaction mixture comprising said organometallic compound, e.g., ruthenium (III) compound, and (ii) separating said organometallic compound from said reaction mixture The organometallic compds. are useful in semiconductor applications as chemical vapor or atomic layer deposition precursors for film depositions.

L4 ANSWER 6 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2006:963878 CAPLUS

DN 145:499235
TI Synthesis, structural characterization, and properties of chromium(III) complexes containing amidinato ligands and η2-pyrazolato, η2-1,2,4-triazolato, or η1-tetrazolato ligands
AU El-Kadri, Oussama M.; Heeg, Mary Jane; Winter, Charles H.
CS Department of Chemistry, Wayne State University, Detroit, MI, 48202, USA
SO Dalton Transactions (2006), (37), 4506-4513
CODEN: DTARAF; ISSN: 1477-9226
PB Royal Society of Chemistry
DT Journal
LA English
OS CASREACT 145:499235
AB Treatment of anhydrous Cr(III) chloride with 2 or 3 equiv of 1,3-di-tert-butylacetamidinato lithium or 1,3-diisopropylacetamidinato lithium in THF at ambient temperature afforded Cr(tBuNCMeNtBu)2(Cl)(THF) (1) and Cr(iPrNCMeNiPr)3 (2) in 78% and 65% yields, resp. Treatment of Cr(tBuNCMeNtBu)2(Cl)(THF) with the K salts of pyrazoles and 1,2,4-triazoles afforded Cr(tBuNCMeNtBu)2(X), where X = 3,5-disubstituted pyrazolato or 3,5-disubstituted 1,2,4-triazolato ligands, in 65-70% yields. X-ray crystal structure analyses of Cr(tBuNCMeNtBu)2(Me2pz) (3, Me2pz = 3,5-dimethylpyrazolato) and Cr(tBuNCMeNtBu)2(Me2trz) (5, Me2trz = 3,5-dimethyl-1,2,4-triazolato) revealed η2-coordination of the Me2pz and Me2trz ligands. Treatment of 1 with trifluoromethyltetrazolatosodium (NaCF3tetz) in the presence of 4-tert-butylpyridine afforded Cr(tBuNCMeNtBu)2(CF3tetz)(4-tBupy) (7)in 30% yield. An x-ray crystal structure determination showed η1-coordination of the tetrazolato ligand through the 2-N atom. The complexes Cr(iPrNCMeNiPr)3 and Cr(tBuNCMeNtBu)2(X) are volatile and sublime with <1% residue between 120 and 165° at 0.05 torr. These complexes are thermally stable at >300° under an inert atmospheric such as N or Ar. Due to the good volatility and high thermal stability, these new compds. are promising precursors for the growth of Cr-containing thin films using atomic layer deposition.
RE.CNT 101 THERE ARE 101 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 7 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2006:796471 CAPLUS
DN 145:223896
TI Processes for the production of Group VIII amidinate complexes as precursors for film deposition
IN Thompson, David Michael
PA USA
SO U.S. Pat. Appl. Publ., 11pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20060177577	A1	20060810	US 2005-53836	20050210
	US 20060229462	A1	20061012	US 2006-345280	20060202
	WO 2006086329	A1	20060817	WO 2006-US4166	20060208

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,

IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

EP 1855863 A1 20071121 EP 2006-720384 20060208
R: DE, FR, GB, IE, IT

JP 2008536800 T 20080911 JP 2007-555161 20060208

IN 2007DN06337 A 20070831 IN 2007-DN6337 20070814

KR 2007101385 A 20071016 KR 2007-720472 20070907

CN 101155676 A 20080402 CN 2006-80010990 20070930

PRAI US 2005-53836 A2 20050210

WO 2006-US4166 W 20060208

OS CASREACT 145:223896; MARPAT 145:223896

AB This invention relates to processes for the production of organometallic compds. M(L)3 and M(L)2(L')2 wherein M is a Group VIII metal, e.g., ruthenium, and L is the same or different and represents a substituted or unsubstituted amidinato group or a substituted or unsubstituted amidinato-like group and L' is N2 or PMe3, which process comprises (i) reacting a substituted or unsubstituted metal source compound, e.g., ruthenium(II) compound, with a substituted or unsubstituted amidinate or amidinate-like compound in the presence of a solvent and under reaction conditions sufficient to produce a reaction mixture comprising said organometallic compound, e.g., ruthenium(III) compound, and (ii) separating said organometallic compound from said reaction mixture The organometallic compds. are useful in semiconductor applications as chemical vapor or atomic layer deposition precursors for film depositions. Thus, tris(N,N'-diisopropylacetamidinato)ruthenium(III) and bis(N,N'-diisopropylacetamidinato)dinitrogenruthenium(II) were prepared from bis[dichloro(η6-benzene)ruthenium(II)] and lithium N,N'-diisopropylacetamidinate in THF/Et2O.

L4 ANSWER 8 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2006:399365 CAPLUS
DN 146:72821
TI ALD of scandium oxide from scandium tris(N,N'-diisopropylacetamidinate) and water
AU de Rouffignac, Philippe; Yousef, Andrew P.; Kim, Kyoung H.; Gordon, Roy G.
CS Department of Chemistry and Chemical Biology, Harvard University, Cambridge, MA, 02138, USA
SO Electrochemical and Solid-State Letters (2006), 9(6), F45-F48
CODEN: ESLEF6; ISSN: 1099-0062
PB Electrochemical Society
DT Journal
LA English
AB Sc2O3 films were deposited by atomic layer deposition (ALD) from a new precursor Sc tris(N,N'-diisopropylacetamidinate) and water. The precursor is thermally stable (> 350°), volatile, with good reactivity to HF-last silicon. A growth rate of 0.3 A/cycle was obtained at 290°. The films were pure (C,N < 0.5 atomic%) and had a refractive index of 1.8. Reactive ion etching tests on ALD Sc2O3 showed an etch rate 18 times slower than ALD HfO2. Elec. measurements showed a high permittivity of .apprx.17, and a leakage c.d. of < 3 + 10-3 A/cm2 for an equivalent oxide thickness of 1.8 nm at 1.0 V.
RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 9 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2006:96903 CAPLUS
DN 144:171112
TI Chemical vapor deposition material and chemical vapor deposition
IN Sakai, Tatsuya; Hashimoto, Sachiko; Matsuki, Yasuo

PA Jsr Corporation, Japan
SO U.S. Pat. Appl. Publ., 7 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20060024443	A1	20060202	US 2005-187982	20050725
	US 7002033	B1	20060221		
	JP 2006037161	A	20060209	JP 2004-218311	20040727
	KR 2006046778	A	20060517	KR 2005-67737	20050726
PRAI	JP 2004-218311	A	20040727		

OS CASREACT 144:171112; MARPAT 144:171112
AB A CVD material comprising a ruthenium compound having a ligand represented by the following formula: wherein R1, R2 and R3 are each independently a hydrogen atom, fluorine atom, trifluoromethyl group or hydrocarbon group having 1 to 10 carbon atoms, and a method of forming a ruthenium film from the CVD material by CVD. A high-quality ruthenium film even when it is very thin can be obtained.
RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 10 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2005:1066089 CAPLUS
DN 144:15965
TI Synthesis, structure and properties of volatile lanthanide complexes containing amidinate ligands: application for Er2O3 thin film growth by atomic layer deposition
AU Paeivaesaari, Jani; Dezelah, Charles L., IV; Back, Dwayne; El-Kaderi, Hani M.; Heeg, Mary Jane; Putkonen, Matti; Niinistoe, Lauri; Winter, Charles H.
CS Laboratory of Inorganic and Analytical Chemistry, Helsinki University of Technology, Espoo, FIN-0201, Finland
SO Journal of Materials Chemistry (2005), 15(39), 4224-4233
CODEN: JMACEP; ISSN: 0959-9428
PB Royal Society of Chemistry
DT Journal
LA English
OS CASREACT 144:15965
AB Treatment of anhydrous rare earth chlorides with three equivalent of Li 1,3-di-tert-butylacetamidinate (prepared in situ from the di-tert-butylcarbodiimide and methyllithium) in THF at ambient temperature afforded Ln(tBuNCMeNtBu)3 (Ln = Y, La, Ce, Nd, Eu, Er, Lu) in 57-72% isolated yields. X-ray crystal structures of these complexes demonstrated monomeric formulations with distorted octahedral geometry about the lanthanide(iii) ions. These new complexes are thermally stable at >300°, and sublime without decomposition between 180-220°/0.05 torr. The atomic layer deposition of Er2O3 films was demonstrated using Er(tBuNCMeNtBu)3 and ozone with substrate temps. between 225-300°. The growth rate increased linearly with substrate temperature from 0.37 Å per cycle at 225° to 0.55 Å per cycle at 300°. Substrate temps. of >300° resulted in significant thickness gradients across the substrates, suggesting thermal decomposition of the precursor. The film growth rate increased slightly with an Er precursor pulse length between 1.0 and 3.0 s, with growth rates of 0.39 and 0.51 Å per cycle, resp. In films deposited at 250°, the growth rates varied linearly with the number of deposition cycles. Time of flight elastic recoil analyses demonstrated slightly O-rich Er2O3 films, with C, H and F levels of 1.0-1.9, 1.7-1.9 and 0.3-1.3 atom%, resp., at substrate temps. of 250 and 300°. IR spectroscopy showed carbonate, suggesting that the C and slight excess of O in the films are due to this species. The as-deposited films were amorphous <300°, but showed

reflections due to cubic Er2O3 at 300°. Atomic force microscopy showed a root mean square surface roughness of 0.3 and 2.8 nm for films deposited at 250 and 300°, resp.
RE.CNT 67 THERE ARE 67 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 11 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2005:797630 CAPLUS
DN 143:397281
TI Atomic Layer Deposition of Y2O3 Thin Films from Yttrium Tris(N,N'-diisopropylacetamidinate) and Water
AU De Rouffignac, Philippe; Park, Jin-Seong; Gordon, Roy G.
CS Department of Chemistry and Chemical Biology, Harvard University, Cambridge, MA, 02138, USA
SO Chemistry of Materials (2005), 17(19), 4808-4814
CODEN: CMATEX; ISSN: 0897-4756
PB American Chemical Society
DT Journal
LA English
AB Y2O3 thin film was deposited by atomic layer deposition (ALD) with precursor yttrium tris(N,N'-diisopropylacetamidinate), Y(iPr2amd)3 and water. The precursor was thermally stable and volatile and had high reactivity with water. The growth rate of Y2O3 films was 0.8 Å/cycle over a wide temperature range (150-280 °C). The films were very pure (C, N < 0.5 atomic %) and had a refractive index of 1.8. The films were smooth and had a cubic polycryst. structure. High quality films were also deposited in 40:1 aspect ratio profiled substrates. Y2O3 films adsorbed water after air exposure because Rutherford backscattering spectroscopy (RBS) and XPS showed an increased oxygen ratio (O/Y > 1.5) and -OH bonds in air-exposed films. A relatively high permittivity (.apprx.12), a low leakage c.d. (<10-7 cm2 at 2 MV/cm) and high elec. breakdown field (.apprx.5 MV/cm) were measured for capacitors prepared from Al2O3 (10 Å)/Y2O3/n-Si structures. Uncapped Y2O3 films showed flatband voltage shifts of 1 V and increased leakage current prior to annealing. ALD Y2O3 is a promising dielec. for advanced electronic applications in nanoscale devices.
RE.CNT 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 12 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2005:570354 CAPLUS
DN 143:108065
TI Capacitor with aluminum oxide and lanthanum oxide containing dielectric structure and fabrication method thereof
IN Lee, Kee-Jeung; Kwon, Hong
PA Hynix Semiconductor Inc., S. Korea
SO U.S. Pat. Appl. Publ., 16 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20050141168	A1	20050630	US 2004-880372	20040630
	US 7102875	B2	20060905		
	KR 2005067535	A	20050705	KR 2003-98521	20031229
	KR 2005067571	A	20050705	KR 2003-98558	20031229
PRAI	KR 2003-98521	A	20031229		
	KR 2003-98558	A	20031229		

AB An object of the present invention is to provide a capacitor with an aluminum oxide and lanthanum oxide containing dual dielec. structure capable of obtaining a large-scale capacitance over approx. 30 fF per cell and a decreased equivalent oxide thickness and a method for fabricating. The

capacitor includes: a lower electrode; a 1st dielec. layer with a high energy band gap formed on the lower electrode; a 2nd dielec. layer formed on the 1st dielec. layer, the 2nd dielec. layer with a high dielec. constant, wherein an energy band gap of the 2nd dielec. layer is lower than the energy band gap of the 1st dielec. layer; and an upper electrode formed on the 2nd dielec. layer.

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 13 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2004:453414 CAPLUS
DN 141:14815
TI Atomic layer deposition using metal amidinates
IN Gordon, Roy G.; Lim, Booyong S.
PA President and Fellows of Harvard College, USA
SO PCT Int. Appl., 52 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004046417	A2	20040603	WO 2003-US36568	20031114
	WO 2004046417	A3	20050310		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	AU 2003290956	A1	20040615	AU 2003-290956	20031114
	EP 1563117	A2	20050817	EP 2003-783541	20031114
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	CN 1726303	A	20060125	CN 2003-80106327	20031114
	JP 2006511716	T	20060406	JP 2004-570408	20031114
	US 20060141155	A1	20060629	US 2006-534687	20060131
PRAI	US 2002-426975P	P	20021115		
	US 2003-463365P	P	20030416		
	WO 2003-US36568	W	20031114		

OS MARPAT 141:14815
AB Metal films are deposited with uniform thickness and excellent step coverage. Cu metal films were deposited on heated substrates by the reaction of alternating doses of Cu(I) N,N'-diisopropylacetamidinate vapor and H gas. Co metal films were deposited on heated substrates by the reaction of alternating doses of Co(II) bis(N,N'-diisopropylacetamidinate) vapor and H gas. Nitrides and oxides of these metals can be formed by replacing the H with NH3 or H2O vapor, resp. The films have very uniform thickness and excellent step coverage in narrow holes. Suitable applications include elec. interconnects in microelectronics and magnetoresistant layers in magnetic information storage devices.

L4 ANSWER 14 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2003:840456 CAPLUS
DN 140:52159
TI Synthesis and Characterization of Volatile, Thermally Stable, Reactive Transition Metal Amidinates
AU Lim, Booyong S.; Rahtu, Antti; Park, Jin-Seong; Gordon, Roy G.

CS Department of Chemistry and Chemical Biology, Harvard University, Cambridge, MA, 02138, USA
SO Inorganic Chemistry (2003), 42(24), 7951-7958
CODEN: INOCAJ; ISSN: 0020-1669
PB American Chemical Society
DT Journal
LA English
OS CASREACT 140:52159
AB Homoleptic metal amidinates [M(R-R'AMD)n]x (R = iPr, tBu, R' = Me, tBu) were prepared and structurally characterized for the transition metals Ti, V, Mn, Fe, Co, Ni, Cu, Ag, and La. In oxidation state 3, monomeric structures were found for Ti(III), V(III), and La(III). Bridging structures were observed for the metals in oxidation state 1; Cu(I) and Ag(I) are held in bridged dimers, and Ag(I) also formed a trimer that cocrystd. with the dimer. Metals in oxidation state 2 occurred in either monomeric or dimeric form. Metals with smaller ionic radii (Co, Ni) were monomeric. Larger metals (Fe, Mn) gave monomeric structures only with the bulkier tert-butyl-substituted amidinates, while the less bulky isopropyl-substituted amidinates formed dimers. The new compds. have properties well-suited for use as precursors for atomic layer deposition (ALD) of thin films, such as high volatility, high thermal stability, and high and properly self-limited reactivity with H2 depositing pure metals, or H2O vapor depositing metal oxides.
RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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---Logging off of STN---

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Executing the logoff script...

=> LOG Y

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DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
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